

Appl. No. 10/601,135
Amdt. dated May 5, 2005
Reply to Office Action of March 9, 2005

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-10 (cancelled).

Claim 11 (previously presented): A method for controlling a treatment unit for treating at least one feed gas, comprising the following steps:

- (i) providing a pressure swing adsorption (PSA) treatment unit;
- (ii) supplying a product gas from the treatment unit which is operating on a parameterized cycle; and
- (iii) utilizing a control unit to control the treatment unit.

Claim 12 (previously presented) The method according to Claim 11, wherein said treatment unit consists of N adsorption units.

Claim 13 (previously presented): The method according to Claim 12, wherein said adsorption unit consists of at least one selected from the following: R1, R2, R3, R4, R5, and R6 units.

Claim 14 (previously presented): The method according to Claim 11, wherein said control unit modifies at least one parameter of the feed gas, and/or the product gas.

Claim 15 (previously presented): The method according to Claim 14, wherein said control unit receives a pre-established signal comprising a change in the process parameter.

Claim 16 (previously presented): The method according to Claim 15, wherein said control unit processes said signal to determine the parameters of an exceptional operating cycle.

Claim 17 (previously presented): The method according to Claim 16, wherein said signal is subject to a predicted change of the operating cycle.

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Claim 18 (previously presented): The method according to Claim 15, wherein intensity of said signal is subject to a change in the composition of the feed gas.

Claim 19 (previously presented): The method according to Claim 11, wherein said control unit comprises a constant reference signal.

Claim 20 (previously presented): The method according to Claim 19, wherein said reference signal is modified to form a pre-established signal when there is a predicted change.

Claim 21 (previously presented): The method according to Claim 15, wherein said pre-established signal is subject to the operation of at least one upstream unit of the treatment unit.

Claim 22 (previously presented): The method according to Claim 15, wherein said pre-established signal comprises partially of the feed gas to be treated.

Claim 23 (previously presented): The method according to Claim 16, wherein said exceptional cycle consists of a predetermined duration.

Claim 24 (previously presented): The method according to Claim 16, wherein the duration of said exceptional cycle is transmitted to the control unit via an end signal.

Claim 25 (previously presented): The method according to Claim 24, wherein said end signal is pre-established subject to a predicted change in the composition of the feed gas.

Claim 26 (previously presented): The method according to Claim 11, wherein said parametrized operating cycle of the treatment unit comprises the following:

- (i) a phase of adsorption;
- (ii) a phase of regeneration; and
- (iii) repressurization.

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Claim 27 (previously presented): The method according to Claim 26, wherein said phase of adsorption occurs at a high pressure of the cycle.

Claim 28 (previously presented): The method according to Claim 26, wherein said phase of regeneration comprises a step of depressurization down to a low pressure of the cycle.

Claim 29 (previously presented): The method according to Claim 26, wherein said repressurization occurs at the high pressure of the cycle.

Claim 30 (previously presented): The method according to Claim 15, wherein said parameters are selected from either the duration of the phase time ($T\phi^{exc}$) and/or the duration of at least one step from a regeneration phase.

Claim 31 (currently amended): The method according to Claim 11, wherein the method comprises the following steps:

- i) sending a signal regularly to the control unit that represents the flow rate and/or the density of the feed gas;
- ii) determining the parameters of an exceptional operating cycle of the treatment unit; and
- iii) adjusting the parameters on the basis of the signal representing the flow rate and/or the density of said feed gas.

Claim 32 (currently amended): The method according to Claim 11, wherein the method comprises the following steps:

- i) sending a signal regularly to the control unit that represents the flow rate and/or the composition of the product gas;
- ii) determining the parameters of the an exceptional operating cycle of the treatment unit; and
- iii) adjusting ~~these~~ the parameters on the basis of the signal representing the flow rate and/or the composition of said product gas.

Claim 33 (previously presented): A method for controlling a treatment unit for treating at least one feed gas, comprising the following steps:

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- (i) providing a pressure swing adsorption (PSA) treatment unit;
- (ii) supplying a product gas from the treatment unit which is operating on a parameterized cycle; and
- (iii) utilizing a control unit to control the treatment unit;

wherein said method comprises of a treatment unit that consists of N adsorption units selected from the following group: R1, R2, R3, R4, R5, and R6 unit, and whereby said control unit modifies at least one parameter of the feed gas, and/or the product gas.

Claim 34 (previously presented): A method for controlling a treatment unit for treating at least one feed gas, comprising the following steps:

- (i) providing a pressure swing adsorption (PSA) treatment unit;
- (ii) supplying a product gas from the treatment unit which is operating on a parameterized cycle; and
- (iii) utilizing a control unit to control the treatment unit;

wherein said treatment unit consists of N adsorption units selected from the following group: R1, R2, R3, R4, R5, and R6 units, and

whereby said control unit modifies at least one parameter of the feed gas, and/or the product gas and receives a pre-established signal comprising a change in the process parameter, and whereby said control unit processes said signal to determine the parameters of an exceptional operating cycle, and wherein said signal is subject to a predicted change in the operating cycle.

Claim 35 (previously presented): The method according to Claim 11, wherein the treatment unit produces hydrogen.

Claim 36 (previously presented): The method according to Claim 35, wherein the treatment unit produces substantially pure hydrogen.

Claims 37-38 (cancelled)